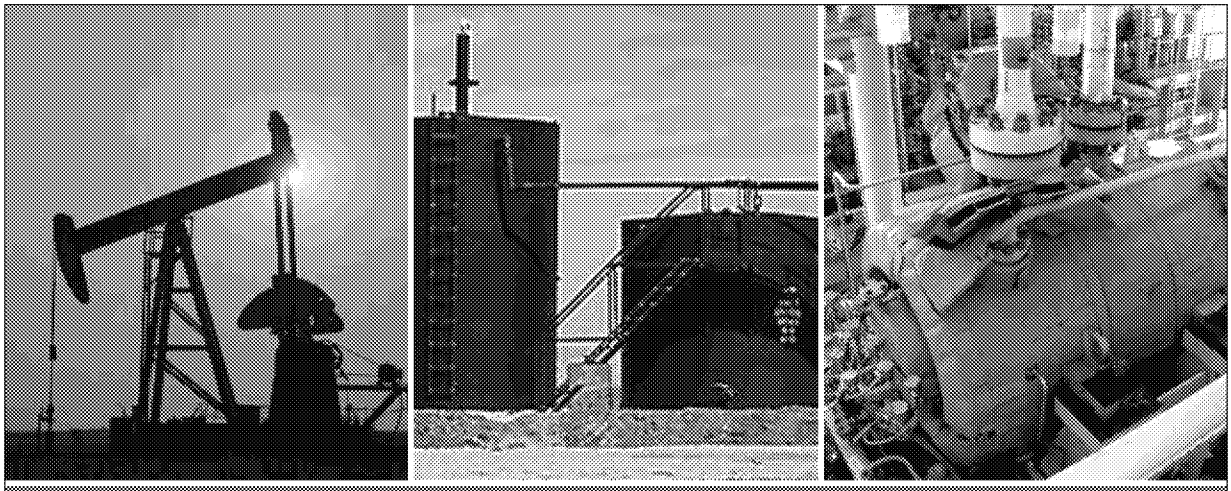
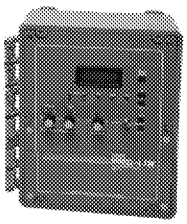


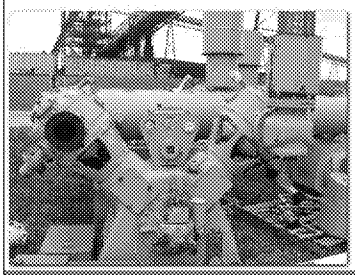
CRUDE OIL AND NATURAL GAS PRODUCTION

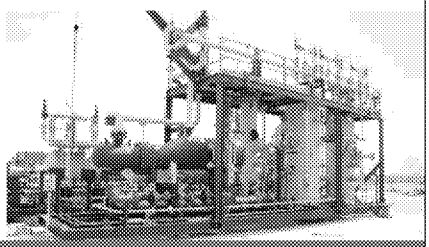
NSPS OOOO

SITE SPECIFIC

- What is located at the site will determine what you are looking for:
  - Gas Well
  - Centrifugal Compressor
  - Reciprocating Compressor
  - Pneumatic Controller
  - Storage Vessel
  - Gas Sweetening Units







GAS WELLS

- Requires annual reports
- Records (§60.5420)
  - Each well completion operation
  - Deviations where well completion operations with hydraulic fracturing were not performed in compliance with the requirements specified in §60.5375
  - Records for completion in this reporting period: location, API #, date/time flowback onset, date/time flowback directed to separator, date/time flowback returned to initial stage, date/time well shut in and disconnected or startup of production, duration of flowback, duration of recovery, duration of combustion, duration of venting, reason for venting (instead of capture or combustion), NOTE: durations specified in hours of time
  - For a wildcat, or delineation with hydraulic fracturing, or low-pressure gas well - above records except duration of recovery to flow line
  - A digital photograph for identification record is acceptable if maintained as §60.5410(a)(4) (date and lat-long imbedded, or with operating GPS unit visible)

CENTRIFUGAL COMPRESSOR

- 95% VOC emission reduction from wet seal degassing system
- Control device operation within parameters §60.5417(f)(1)
- Flame always present
- Combustion controls have no visible emissions (not to exceed one minute during 15 minute period)
- Maintenance and operation records of control device
- Condenser device has site-specific performance curve
- Condenser has daily average outlet temperature calculation
- From curve and average temp, efficiency calculation daily §60.5415(b)(2)(viii)(D-E)
- Annual report and §60.5420(c)(2) records: deviations from operation in compliance specified in §60.5380

RECIPROCATING COMPRESSOR

- §60.5385(a)(1) or (2): hours since last rod packing replacement, replace 26,000 hours or 36 months, annual report and §60.5420(c)(3) records:
  - cumulative hours since startup or last rod packing replacement,
  - date/time of last rod packing replacement,
  - or date of installation of a rod packing emissions collection system and closed vent system as specified in §60.5385(a)(3)
- §60.5385(a)(3) (rod packing emissions are collected)
  - operate under negative pressure,
  - closed vent requirements in §60.5416(a) and (b)

PNEUMATIC CONTROLLER

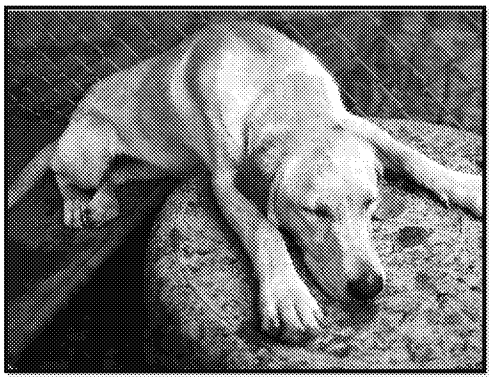
- Continuous operations, annual report, and §60.5420(c)(4) records:
  - Date, location, manufacturer for each controller
  - For pneumatic controller affected facilities with a natural gas bleed rate greater than the applicable standard, records of demonstration that the use is required and the reasons why
  - If the pneumatic controller is not located at a natural gas processing plant, records of the manufacturer's specifications indicating that the controller is designed such that natural gas bleed rate is less than or equal to 6 scfh
  - If the pneumatic controller is located at a natural gas processing plant, records of the documentation that the natural gas bleed rate is zero
  - Records of deviations in cases where the pneumatic controller was not operated in compliance with the requirements specified in §60.5390

STORAGE VESSELS

- §60.5416(c) cover and closed vent system
  - Monthly inspection (olfactory, visual, auditory) record
  - Bypass device must have installed, calibrated, and maintained flow indicator with audible alarm or remote alarm to field office, records of bypass, visual monthly inspection records, records of key checkout (if key operated)
  - Repair records
  - Delay of repair records
  - Unsafe to inspect and difficult to inspect should have a written plan for when inspection can take place
- §60.5417(h) control device
  - Combustion device: monthly visual inspection to confirm pilot light, visual emission <1 minute per 15 minute period, sight/smell/sound inspection
  - Record of return to operation if any indication of improper operation is found
  - Record of the manufacturer's written operating instructions, procedures, and maintenance schedule must be available for inspection as specified in §60.5420(c)(13)
- §60.5411(c)(2) closed vent system that routes emissions to a process
  - No sight/smell/sound emissions, inspection records
  - Must be operational >95% of the year, operation records

SWEETENING UNITS

- Minimum required SO2 emission reduction efficiency (Zc) is compared to the emission reduction efficiency (R) achieved by the sulfur recovery technology
  - IF R ≥ Zc, your affected facility is in compliance



LEAK DETECTION

- Each pump in light liquid service shall be monitored monthly to detect leaks by the methods specified in §60.485a(b) (Method 21 shall be used to determine the presence of leaking sources.)
- Each pump in light liquid service shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal.
- Exceptions:
  - Dual mechanical seal with barrier fluid system
  - Designated no detectable emissions as indicated by an instrument reading of less than 500 ppm above background
  - Closed vent system that captures and transports leakage
  - Pumps that meet unsafe-to-monitor requirements, including written plan to complete monitoring during safe-to-monitor times
  - Unmanned plant site shall be visually inspected as often as practicable and at least monthly.

LEAK DETECTION

- 60.482-4a Standards: Pressure relief devices in gas/vapor service
  - Except during pressure releases, each pressure relief device in gas/vapor service shall be operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as determined by the methods specified in §60.485a(c) (Method 21)
  - As soon as practicable after each pressure release, the pressure relief device shall be returned to, and shall be monitored to confirm, a condition of no detectable emissions, no later than 5 calendar days after the pressure release.
  - Exceptions: pressure relief device that is routed to a process or fuel gas system or equipped with a closed vent system capable of capturing and transporting leakage through the pressure relief device to a control device and any pressure relief device that is equipped with a rupture disk upstream of the pressure relief device, and the rupture disk is replaced no later than 5 days after release.

LEAK DETECTION

- 60.482-5a Standards: Sampling connection systems
  - Containers must be closed when not being filled or emptied
  - Purged process fluids are captured and transported appropriately
- 60.482-6a Standards: Open-ended valves or lines
  - Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve that seals the open end at all times except during operations requiring process fluid flow
- 60.482-7a Standards: Valves in gas/vapor service and in light liquid service
  - Each valve shall be monitored monthly to detect leaks by the methods specified in §60.485a(b)
  - When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in §60.482-9a.
- 60.482-8a Standards: Pumps, valves, and connectors in heavy liquid service and pressure relief devices in light liquid or heavy liquid service
  - If evidence of a potential leak is found by visual, audible, olfactory, or any other detection method at pumps, valves, and connectors in heavy liquid service and pressure relief devices in light liquid or heavy liquid service, the owner or operator shall, within 5 days, follow either (1) monitor and comply with repair or (2) eliminate the indication of the leak.

LEAK DETECTION

- 60.482-9a Standards: Delay of repair
  - Delay of repair of equipment for which leaks have been detected will be allowed if repair within 15 days is technically infeasible without a process unit shutdown. Repair of this equipment shall occur before the end of the next process unit shutdown. Monitoring to verify repair must occur within 15 days after startup of the process unit.
  - Delay of repair of equipment will be allowed for equipment which is isolated from the process and which does not remain in VOC service.
  - Delay of repair for valves and connectors will be allowed if purged material emissions for repair would exceed the amount of fugitive emissions from the leak and the purged emissions are recovered or collected and destroyed during the repair.
  - Delay of repair for pumps will be allowed if repair requires the use of a dual mechanical seal system that includes a barrier fluid system, and is completed as soon as practicable, but not later than 6 months after the leak was detected.
  - Delay of repair beyond a process unit shutdown will be allowed for a valve, if valve assembly replacement is necessary during the process unit shutdown, valve assembly supplies have been depleted, and valve assembly supplies had been sufficiently stocked before the supplies were depleted. Delay of repair beyond the next process unit shutdown will not be allowed unless the next process unit shutdown occurs sooner than 6 months after the first process unit shutdown.
  - When delay of repair is allowed for a leaking pump, valve, or connector that remains in service, the pump, valve, or connector may be considered to be repaired and no longer subject to delay of repair requirements if two consecutive monthly monitoring instrument readings are below the leak definition.

LEAK DETECTION

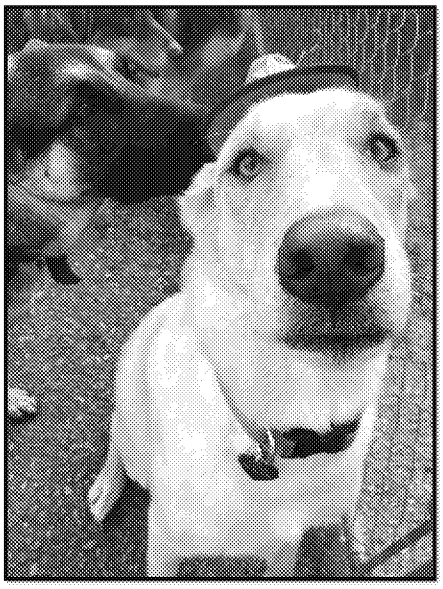
- 60.482-10a Standards: Closed vent systems and control devices
  - Each closed vent system shall have annual visual inspections for visible, audible, or olfactory indications of leaks
- 60.482-11a Standards: Connectors in gas/vapor service and in light liquid service
  - If all connectors in the process unit have been monitored for leaks prior to the compliance date, no initial monitoring is required provided either no process changes have been made since the monitoring or the owner or operator can determine that the results of the monitoring, with or without adjustments, reliably demonstrate compliance despite process changes. If required to monitor because of a process change, the owner or operator is required to monitor only those connectors involved in the process change.
  - The connectors shall be monitored to detect leaks by the method specified in §60.485a(b) and, as applicable, §60.485a(c)
    - Method 21 shall be used to determine the presence of leaking sources

LEAK DETECTION

- §60.483-1a Alternative standards for valves—allowable percentage of valves leaking.
- 60.483-1a (a) An owner or operator may elect to comply with an allowable percentage of valves leaking of equal to or less than 2.0 percent
- 60.483-1a (b) The following requirements shall be met before implementing one of the alternative work practices:
  - An owner or operator must notify the Administrator before implementing one of the alternative work practices
  - A performance test as specified in paragraph (c) of this section shall be conducted initially upon designation, annually, and at other times requested by the Administrator
- 60.483-2a(a)(1) An owner or operator may elect to comply with one of the alternative work practices
  - An owner or operator must notify the Administrator before implementing one of the alternative work practices
  - An owner or operator shall comply initially with the requirements for valves in gas/vapor service and valves in light liquid service
  - After 2 consecutive quarterly leak detection periods with the percent of valves leaking equal to or less than 2.0, an owner or operator may begin to skip 1 of the quarterly leak detection periods for the valves in gas/vapor and light liquid service.
  - After 5 consecutive quarterly leak detection periods with the percent of valves leaking equal to or less than 2.0, an owner or operator may begin to skip 3 of the quarterly leak detection periods
  - If the percent of valves leaking is greater than 2.0, the owner or operator shall comply with the requirements as described in §60.482-7a but can again elect to use this section
  - An owner or operator must keep a record of the percent of valves found leaking during each leak detection period
  - A valve that begins operation in gas/vapor service or light liquid service after the initial startup date for a process unit following one of the alternative standards in this section must be monitored in accordance with §60.482-7a(a)(2)(i) or (ii) before the provisions of this section can be applied to that valve

LEAK DETECTION

- Just kidding, there's not more. We'll make it easy tomorrow.



Thank you!

TO BE CONTINUED...

At the 9:00 Form Workshop tomorrow